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| EXAMINER | |
|---|---|
| ZHENG, EVA Y | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2634 | 7 |

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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 10/011,026 | Applicant(s) SHPERLING ET AL. | |
|---|---|---|---|
| | Examiner Eva Yi Zheng | Art Unit 2634 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *06 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6,8,9,12,13,16,17,19,20 and 23-34* is/are rejected.

7)☒ Claim(s) *3-5,7,10,11,14,15,18,21 and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1. Examiner withdrawal allowance of claims 1-34 based on new references found.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 6, 8, 9, 12, 13, 16, 17, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kotzin et al. (6,038,263).

a) Regarding claim 1, Kotzin et al disclose in a wireless communication system, the communication system providing communication services to a plurality of mobile stations, a method for providing a plurality of transmit diversity protocols, the method comprising: (as shown in Fig. 4)

generating a first signal (signal at 218 Fig. 4) based on a first data stream having a first pilot (Wx) and a second data stream having a second pilot (Wi), the first signal including the first and second pilots;

generating a second signal (signal at 222 Fig. 4) based on the first data stream having the first pilot (Wy) and the second data stream having the second pilot ($W_A$), such that the second signal is diverse relative to the first signal, the second signal including the first and second pilots (as shown in Fig. 6; Col 9, L 16-40);

phase-shift modulating (QPSK, Col 5, L 41-46) the first signal to produce a phase-shift modulated signal;

transmitting the phase-shift modulated signal via a first antenna (Col 5, L 41-46); and

transmitting the second signal via a second antenna (as shown in Fig. 4),

wherein the first pilot is based on a first orthogonal code and the second pilot is based on a second orthogonal code (Col 9, L 21-27).

b) Regarding claims 2 and 13, Kotzin et al disclose wherein the step of generating the first signal based on the first data stream having the first pilot and the second data stream having the second pilot comprises combining the first data stream and the second data stream such that the first signal includes the first pilot and the second pilot (as shown in item a above), and wherein each of the first and second pilots is based on a Walsh code (Col 2, L 47-49).

c) Regarding claim 6, Kotzin et al disclose wherein the step of generating the second signal based on the first data stream having the first pilot and the second data stream having the second pilot comprises combining the first and second data streams such that the second signal includes the first pilot and the second pilot (as shown in item a above), and wherein each of the first and second pilots is based on a Walsh code (Col 2, L 47-49).

d) Regarding claim 8, Kotzin et al disclose wherein the phase-shift modulated signal comprises a first phase-shift modulated signal (312 in Fig. 4; Col 5, L 41-46), and further

comprising the steps of phase shift the second signal (413 in Fig. 4; Col 7, L 56-62) to produce a second phase-shift modulated signal.

e) Regarding claim 9, Kotzin et al disclose wherein the step of transmitting a second signal via a second antenna (222 in Fig. 4) comprises transmitting a second phase-shift modulated signal (413 in Fig. 4; Col 7, L 56-62) via a second antenna.

f) Regarding claim 12, Kotzin et al disclose in a wireless communication system, the communication system providing communication services to a plurality of mobile stations, a base station for providing a plurality of transmit diversity protocol, the base station comprising:

a first data stream source adapted to provide a first data stream having a first pilot, the first pilot (Wx) is based on a first orthogonal code (Col 9, L 21-27).;

a second data stream source adapted to provide a second data stream having a second pilot (Wi), the second pilot is based on a second orthogonal code (Col 9, L 21-27);

a first signal generator (Pilot$_A$, Fig. 1; Col 3, L 49-55) adapted to generate a first signal based on the first data stream and the second data stream, the first signal including the first and second pilots (Col 9, L 21-27);

a second signal generator (Pilot$_A$, Fig. 1; L 49-55) adapted to generate a second signal based on the first data stream and the second data stream such that the second signal is diverse relative to the first signal, the second signal including the first and second pilots (abstract; Col 9, L 21-27);

a phase-shift modulator (312 in Fig. 4; QPSK, Col 5, L 41-46) coupled to the first signal generator, the phase-shift modulator being operable to modulate the first signal to produce a phase-shift modulated signal;

a first antenna (218 in Fig. 4) coupled to the phase-shift modulator, the first antenna being operable to transmit the phase-shift modulated signal; and

a second antenna (222 in Fig.4) coupled to the second signal generator, the second antenna being operable to transmit the second signal.

g) Regarding claim 16, Kotzin et al disclose wherein the first signal generator (Pilot$_A$, Fig. 1; Col 3, L 49-55) comprises a first signal combination circuit, wherein the first signal combination circuit is operable to combine the first data stream (Wx) and the second data stream (Wi) to produce the first signal (signal at 218 Fig. 4).

h) Regarding claim 17, Kotzin et al disclose wherein the second signal generator (Pilot$_A$, Fig. 1; L 49-55) comprises a second signal combination circuit, wherein the second signal combination circuit is operable to combine the first data stream (Wy) and the second data stream (W$_A$), to produce the second signal (signal at 222 Fig. 4), and wherein the second signal is diverse relative to the first signal (as shown in Fig. 6; Col 9, L 16-40).

I) Regarding claim 19, Kotzin et al disclose wherein the phase-shift modulator (312 in Fig. 4; Col 5, L 41-46), comprises a first phase-shift modulator operable to modulate the first signal to produce a first phase shift modulated signal, and further comprising a second phase-shift modulator (413 in Fig. 4; Col 7, L 56-62) operatively coupled to the

second signal generator, wherein the second phase-shift modulator is operable to modulate the second signal to produce a second phase-shift modulated signal.

j) Regarding claim 20, Kotzin et al disclose wherein the second antenna (222 in Fig. 4) comprises an antenna operatively coupled to the second phase-shift modulator (413 in Fig. 4), and wherein the antenna is operable to transmit the second phase-shift modulated signal (Col 7, L 56-62).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 23-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kotzin et al. in view of Langberg et al. (US 5,852,630).

Kotzin et al disclose all of the subject matter as described above except for the method written by a program embodied in a computer readable medium as recited in claims 23-34.

However, Langberg et al. teaches that the method and apparatus for a transceiver warm start activation procedure with precoding can be implemented in software stored in a computer readable medium. The computer readable medium is an electronic, magnetic optical, or other physical device or means that can be contain or

store a computer program for use by or in connection with a computer related system for method (C 3, L51-65). One skilled in the art would have clearly recognized that the method of Kotzin et al would have been implemented in software. The implemented software would perform same function of the hardware for less expense, adaptability, and flexibility. Therefore, it would have been obvious to use the software in the system of Kotzin et al as taught by Langberg et al. in order to reduce cost and improve the adaptability and flexibility of the communication system.

### *Allowable Subject Matter*

6. Claims 3-5, 7, 10, 11, 14, 15, 18, 21 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Conclusion*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Yi Zheng whose telephone number is 703-305-8699. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-879-9306.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Eva Yi Zheng
Examiner
Art Unit 2634

April 9, 2004

SHUWANG LIU
PRIMARY EXAMINER